

WHAT IS CLAIMED IS:

1                   1.       An digital circuit having at least first and second edge-triggered  
2 devices, respectively receiving first and second clock signals, and a selectable circuit path  
3 for forming at least one scan path that includes the first and second edge-triggered  
4 devices, including:

5                         a latch in the scan data path, the latch having a data input coupled to  
6 receive an output from the first device and an output coupled to an input of the second  
7 device, the latch being clocked by the second clock signal to temporarily hold data while  
8 the first and second devices change state.

1                   2.       The digital circuit of claim 1, including multiplexer circuits for  
2 selectively forming the scan data path in response to a test signal.

1                   3.       the digital circuit of claim 2, wherein the first and second devices  
2 form functional circuits in absence of the test signal.

1                   4.       The digital circuit of claim 1, wherein the first and second clock  
2 signals are asynchronous to one another.

1                   5.       A digital circuit structured to be subjected to scan testing,  
2 comprising,  
3                         a scan data input;  
4                         a scan data output;  
5                         at least first and second clock domains each including one or more edge-  
6 triggered devices, each clock domain receiving first and second clock signals;  
7                         a data path selectable in response to a test signal for form a scan data path  
8 between the scan data input and the scan data output that includes the first and second  
9 with a scan data path portion from an output of the first device to an input of the second  
10 device; and  
11                         a latch in the scan data path portion that is clocked by the second clock  
12 signal.

1                   6.       A method of scan-testing digital logic comprising at least first and  
2 second digital circuits having a data path from one to the other and respectively clocked

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3 by first and second clock signals, each digital circuit including at least one edge-triggered  
4 device, the method including the steps of:  
5 providing a latch element in the data path clocked by a test clock;  
6 asserting a test signal to cause at least one serial scan chain to be formed  
7 that includes the first and second digital circuits;  
8 operating the first, second, and test clock signals to cause the scan chain to  
9 receive test data such that the test clock assumes one state to hold the latch element while  
10 the edge-triggered devices are caused to change state by the first and second clock signals  
11 and the test clock then assumes a second state to allow data to pass along the test path  
12 from the one digital circuit to the other.

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